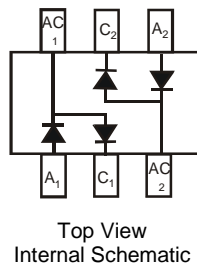


## Features

- Fast Switching Speed
- Small Surface Mount Package
- Low Reverse Recovery Time for Fast Switching
- Two "BAV99" Circuits In One Package
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**
- **PPAP Capable (Note 4)**

## Mechanical Data

- Case: SOT363
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Annealed over Alloy 42 Leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208 <sup>Ⓔ</sup>
- Polarity: See Diagram
- Weight: 0.006 grams (Approximate)



## Ordering Information (Note 5)

Part Number	Qualification	Case	Packaging
BAV99DWQ-7-F	Automotive	SOT363	3000/Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. Automotive products are AEC-Q101 qualified and are PPAP capable. Refer to [http://www.diodes.com/product\\_compliance\\_definitions.html](http://www.diodes.com/product_compliance_definitions.html).
  5. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

## Marking Information



KJG = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: D = 2016)  
 M = Month (ex: 9 = September)

### Date Code Key

<b>Year</b>	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
<b>Code</b>	Z	A	B	C	D	E	F	G	H	I	J	K
<b>Month</b>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Code</b>	1	2	3	4	5	6	7	8	9	O	N	D

**Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic		Symbol	Value	Unit
Non-Repetitive Peak Reverse Voltage		V <sub>RM</sub>	100	V
Peak Repetitive Reverse Voltage		V <sub>R(RM)</sub>	75	V
Working Peak Reverse Voltage		V <sub>R(WM)</sub>		
DC Blocking Voltage		V <sub>R</sub>		
RMS Reverse Voltage		V <sub>R(RMS)</sub>	53	V
Forward Continuous Current (Note 6)		I <sub>FM</sub>	215	mA
Non-Repetitive Peak Forward Surge Current	@ t = 1.0µs	I <sub>FSM</sub>	2.0	A
	@ t = 1.0ms		1.0	
	@ t = 1.0s		0.5	

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P <sub>D</sub>	200	mW
Power Dissipation (Note 7)	P <sub>D</sub>	300	mW
Thermal Resistance Junction to Ambient Air (Note 6)	R <sub>θJA</sub>	625	°C/W
Thermal Resistance Junction to Ambient Air (Note 7)	R <sub>θJA</sub>	417	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 8)	V <sub>(BR)R</sub>	75	—	V	I <sub>R</sub> = 2.5µA
Forward Voltage	V <sub>F</sub>	—	0.715	V	I <sub>F</sub> = 1.0mA
		—	0.855		I <sub>F</sub> = 10mA
		—	1.0		I <sub>F</sub> = 50mA
		—	1.25		I <sub>F</sub> = 150mA
Reverse Current (Note 8)	I <sub>R</sub>	—	2.5	µA	V <sub>R</sub> = 75V
		—	50		V <sub>R</sub> = 75V, T <sub>J</sub> = +150°C
		—	30		V <sub>R</sub> = 25V, T <sub>J</sub> = +150°C
		—	25		V <sub>R</sub> = 20V
Total Capacitance	C <sub>T</sub>	—	2.0	pF	V <sub>R</sub> = 0, f = 1.0MHz
Reverse Recovery Time	t <sub>RR</sub>	—	4.0	ns	I <sub>F</sub> = I <sub>R</sub> = 10mA, I <sub>RR</sub> = 0.1 x I <sub>R</sub> , R <sub>L</sub> = 100Ω

- Notes:
- 6. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on our website at <http://www.diodes.com/package-outlines.html>.
  - 7. Device mounted on Alumina PCB, 0.4 inch x 0.3 inch x 0.024 inch; pad layout as shown on our website at <http://www.diodes.com/package-outlines.html>.
  - 8. Short duration pulse test used to minimize self-heating effect.

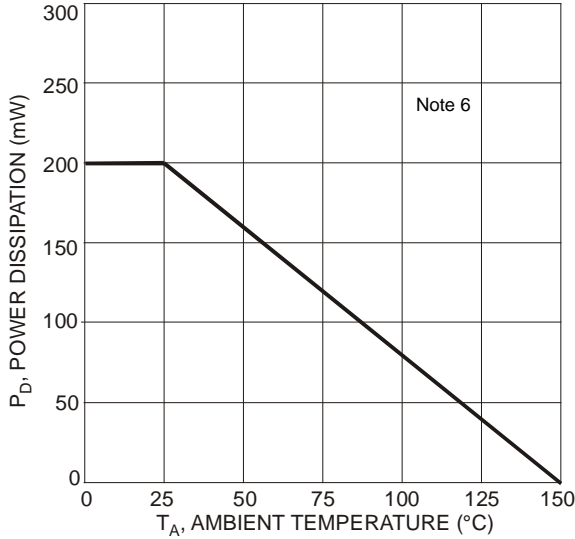


Fig. 1 Power Derating Curve, Total Package

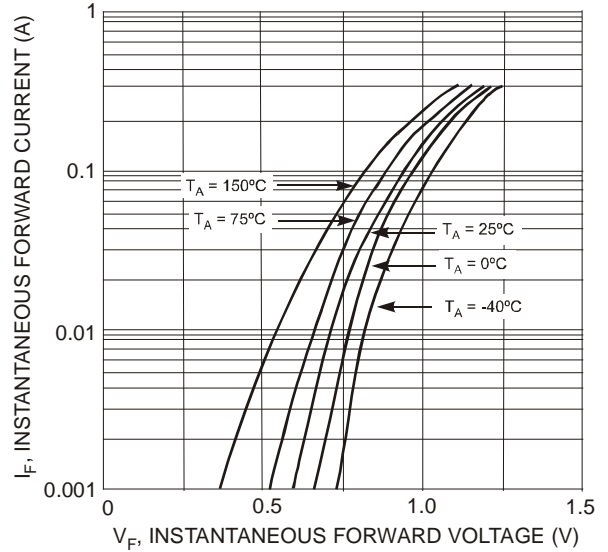


Fig. 2 Typical Forward Characteristics, Per Element

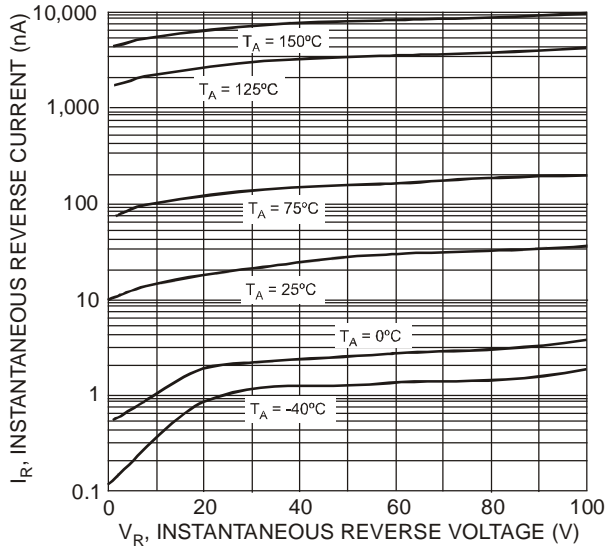


Fig. 3 Typical Reverse Characteristics, Per Element

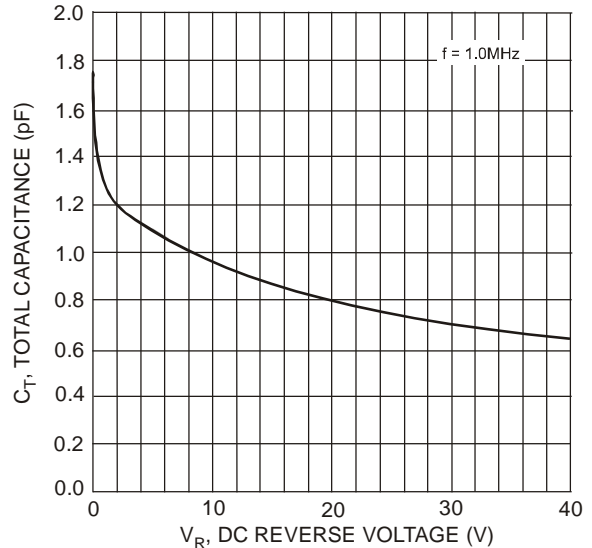
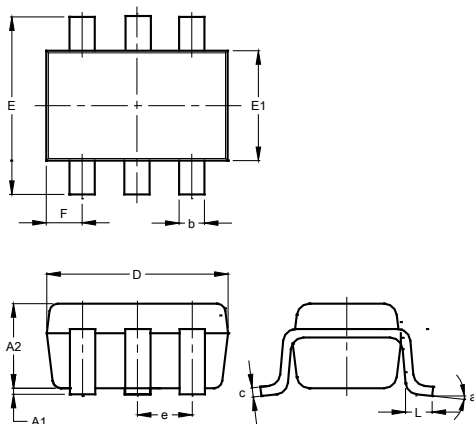


Fig. 4 Total Capacitance vs. Reverse Voltage, Per Element

## Package Outline Dimensions

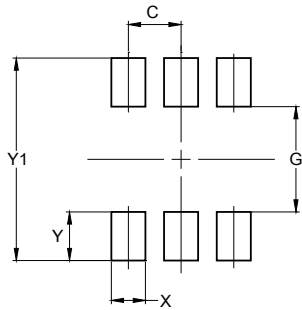
Please see <http://www.diodes.com/package-outlines.html> for the latest version.



SOT363			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.90	1.00	1.00
b	0.10	0.30	0.25
c	0.10	0.22	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
F	0.40	0.45	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

## Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.



Dimensions	Value (in mm)
<b>C</b>	0.650
<b>G</b>	1.300
<b>X</b>	0.420
<b>Y</b>	0.600
<b>Y1</b>	2.500

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